SEARCH FOR BREAK TO EASE CAR VIBRATION

Automobile Manufacturers Want a Process That Will Stop Tube Snapping.

Thanks to the care that is given to the details of automobile construction, gasolene line pipes, among other things, are far less subject to breakage than was the case a few years ago.

It still happens occasionally, however, that a tube will snap off at an inopportune time, causing delay and annoyance, if nothing worse. As a rule, vibration is the cause, and it is a good idea for the owner of a car to examine the feed pipe while the motor is running with a view to forestalling trouble.

Any object that is capable of vibration has what is called its period of vibration; that is to say, the natural rate of vibration which is most easily set up and has the greatest amplitude of movement. Other things being equal, a long pipe will have a longer period of vibration, or a slower motion, than a short one.

A gasolene motor as a whole has its period of vibration, which accounts for the fact that many motors vibrate considerably at a certain critical speed, while running smoothly at other speeds, the period of the motor coinciding with that of the crankshaft, or of some other imperfectly balanced part.

If the period of vibration of a gasolene pipe corresponds to the vibration, even if it is slight, produced by the motor at a commonly employed speed, there is great danger of breakage. It usually is quite easy to determine this by running the motor at various speeds and watching the pipe, which will be seen to spring back and forth in a marked manner if it gets in step, so to speak, with the motor.

If this happens, the cure is to attach a support to the pipe at about half its length, which not only affords support for the weight, but doubles the speed of vibration—that is to say, if the period of vibration of the whole pipe was 800 times per minute, corresponding with 800 revolutions per minute of the motor, the period of the two half lengths would be 1,600 times a minute each, not only is this speed far less likely to be attained, but the amplitude of the movement will be very much less—practically harmless, in fact.

MANY CITIES SEEKING AUTO-DRIVEN APPARATUS

Out of a total of about 9,500 separate pieces of fire apparatus in use in 315 cities of 15,000 population or over in the United States and Canada, no less than 2,370 will be motor driven before the end of the present year.

At the end of 1913 the total was practically 8,600, and the number of motor vehicles in round numbers, 1,030. In other words, it is anticipated that during the year the amount of automobile apparatus will increase from 18 to 26 per cent, and this notwithstanding the fact that in nearly every municipality equipment must proceed gradually according to the relative ability of the several communities to retire horse-drawn equipment in favor of the preferred form.

The figures are derived from a careful compilation made by the Fireman's Herald, following a canvass of some 400 cities. The totals thus obtained for standing equipment in service at the end of last year indicate an aggregate of 8,358 pieces, of which 220 were hand-drawn, 1,059 horse-drawn, 1,534 motor propelled, and 36 fireboats.

A very striking fact is that of approximately 500 pieces which were specified among the intended purchases of city departments for the current calendar year, 535, or 92 per cent, are automobiles. Thus there is indicated a probable gain in motorized equipment of more than 50 per cent. One important branch of fire fighting in which the motor vehicle already is figuring extensively and in which it seems destined to play a most important part is the work of the small town and rural companies, most of which are composed of volunteers.

"CAR WITH THE MARVELOUS MOTOR"---CHANDLER LOGAN

Motor car slogans came into existence with the first automobile placed on the market, and have been coined pretty frequently since. "No hill too steep, no sand too deep," "the choice of men who know," "ask the man who owns one," "runs with a conscience," "car of the American family," are all by-words that convey the name of some particular car to most of us.

The latest acquisition to the list of slogans is that put forth by the Chandler Motor Car Company of Cleveland—"the car with the marvelous motor." During the coming year all efforts of Chandler salesmen and advertising men will be devoted to placing the newest slogan in as many different quarters of the country as possible.

"Chandler owners possess the unique distinction of being responsible for the selection of the new slogan," says F. T. Chandler, president of the company manufacturing the Chandler light weight six. "We are the last to believe in a purely mechanical catch phrase originated by the advertising department. Such slogans are apt to be either ridiculous or so meaningless that they are soon forgotten.

"Our sales department first called my attention to the great number of letters received from Chandler owners referring to the 'marvelous motor' in their cars. These letters came from widely separated sections of the country, and to any one reading over twenty or thirty of them the recurrence of the same phrase seemed more than a coincidence. Furthermore, the fact that the Chandler Six motor is of our own design and manufacture, and not a stock motor manufactured outside, led us to adopt the slogan suggested by our owners."

"Stop! Look! Listen!"

(Motor Age Editorial.)

A passenger train headed for Chicago Sunday night struck a touring car at a grade crossing. There were eight persons in the motor car, and of this number five were killed outright by the collision. Now the coroner is trying to place the blame, and again the general public has become impressed with the need of better safeguarding grade crossings. Perhaps the investigation will result in legislation that will better conditions, but this is doubtful. A week hence and the public will have forgotten the accidents, drivers will continue taking chances at railroad crossings, and the elevation of tracks will continue to hang fire.

But there will come a time when the safety first principle will prevail. The railroads, as a measure of self-protection, will urge the elevation of tracks, while the drivers of motor cars will exercise far more caution than they do at present. The combination of the two will do much to minimize the number of railroad accidents.

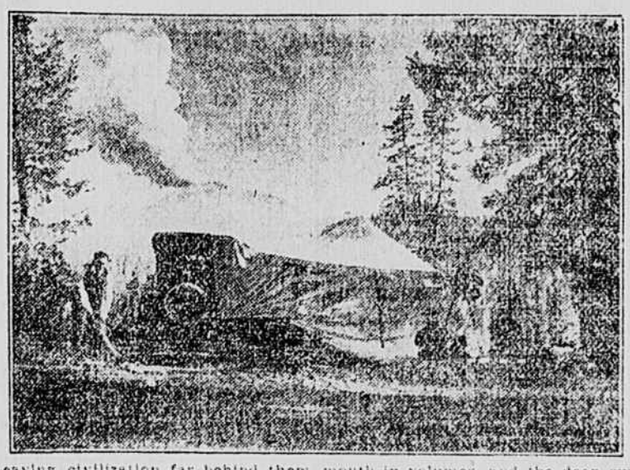
Railway companies are not always to blame for these accidents. Most of them have taken every precaution possible, excepting elevating the tracks, to prevent just such accidents. They have put up huge signs, they have installed warning bells and gongs, and they have placed watchmen at bad places, but still the accidents occur. Why? Because investigation has shown that in many cases the motorists themselves have been negligent, and have disregarded the safety measures adopted by the railroads.

Not more than a month ago Motor Age published the report of the El Paso and Southwestern Railroad, which had collected statistics on the probable cause of motor car accidents at railroad crossings. These were gathered by placing a representative at a bad crossing and noting the manner in which each motor car driver approached the crossing. The report shows that while this man was on duty 3,407 cars passed this crossing. Of these 50 per cent did not look in either direction; 17 per cent looked in one direction, and 2 per cent of the whole number looked in both directions. A total of 290 crossed at a speed greater than twenty miles an hour, without looking in either direction. Six saw a flagman posted at the track and crossed, despite this warning. Since that report, one or two big railroad corporations have compiled similar statistics, and their report is along the same line.

What follows this carelessness on the part of the drivers of motor cars? That is not hard to find out. Usually we read of the surprised driver stalling his motor and being unable to get out of the way of the approaching train. Usually the motor stalls because the driver forgets to shift his gears. Running on high, he steps on the throttle while moving slowly, and the engine fails to respond to the unexpected acceleration. Then the accident. Your careful driver is just the opposite. Unless he has a clear view of the tracks both ways, and is certain no train is approaching, he comes to a full stop until he actually knows that the coast is clear. If there is the slightest doubt, he waits. Such a driver never is in danger at railroad crossings.

It will be years before all railroads recognize the necessity of elevating their tracks, but until such time, it really is up to the motorist to do his share and "Stop, look! listen!" A loss of a minute may save many lives.

Maxwell "25" at Mt. Lassen



Leaving civilization far behind them and taking their lives in their hands, a party of four dauntless automobilists in a Maxwell "25," negotiated rough mountain roads, deep snowdrifts and almost impossible grades until they pitched camp within a few miles of the crater of Mt. Lassen, in California.

The accompanying photograph gives an idea of the country surrounding the volcano. Mt. Lassen is shown in the distance with its crater incessantly active. Steam and smoke pour from its mouth in volumes, and the deep rumblings to be heard occasionally from the depths of the mountain are warnings to careless tourists that the unexpected may happen at any moment.

In the foreground is the Maxwell "25" camp. The wonderful car never faltered in its journey, and is shown here playing the double role of automobile and camp. This is the first car to succeed in making the entire trip without trouble, and holds the record for proximity to the crater.

UNITED STATES LEADS IN AUTO OWNERSHIP

One-fourth of all the motor cars of the world are owned in the United States. There are now 1,400,000 registered cars in this country.

Great Britain is second, with 250,000, and France, third, with 93,000. Persia has thirteen and Liberia, one. Many large cities in foreign countries have no motor cars.

For instance, Canton, China, with its population in excess of 2,000,000, is now awaiting arrival of a vehicle which does not have to be pulled by a donkey.

E. Merle Hooper, Standard Oil representative in Canton, on leaving for the United States several months ago, promised his almond-eyed friends that he would return with a vehicle which would run itself.

Hooper was at the F. B. Stearns Company plant, Cleveland, O., last week arranging for a Stearns-Knight car to follow him to the poppy land as soon as some roads are built. There is only one street in Canton wide enough for a motor car.

"There are no country roads which amount to anything," says Hooper. "The Chinese are just awakening to the value of good roads, and have several tentative plans for highway improvements."